

REMARKS

INTRODUCTION:

In accordance with the foregoing, claim 10 has been canceled without prejudice or disclaimer, and claims 1 and 25 have been amended. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1, 4-7, 9, 19-23 and 25 are pending and under consideration. Reconsideration is respectfully requested.

ENTRY OF RESPONSE UNDER 37 C.F.R. §1.116:

Applicants request entry of this Rule 116 Response and Request for Reconsideration because:

(a) at least certain of the rejected claims have been canceled thereby at least reducing the issues for appeal;

(b) it is believed that the amendment of claims 1 and 25 puts this application into condition for allowance;

(c) the amendments were not earlier presented because the Applicants believed in good faith that the cited prior art did not disclose the present invention as previously claimed; and/or

(d) the amendments place the application at least into a better form for appeal. No new features or new issues are being raised.

The Manual of Patent Examining Procedures sets forth in §714.12 that "[a]ny amendment that would place the case either in condition for allowance or in better form for appeal may be entered." (Underlining added for emphasis) Moreover, §714.13 sets forth that "[t]he Proposed Amendment should be given sufficient consideration to determine whether the claims are in condition for allowance and/or whether the issues on appeal are simplified." The Manual of Patent Examining Procedures further articulates that the reason for any non-entry should be explained expressly in the Advisory Action.

REJECTION UNDER 35 U.S.C. §112:

In the Office Action, at page 2, numbered paragraph 2, claims 1, 4-7, 9-10 and 19-23 were rejected under 35 U.S.C. §112, first paragraph, for the reasons set forth therein. This rejection is traversed and reconsideration is requested.

Claim 10 has been cancelled without prejudice or disclaimer.

Independent claim 1 has been amended to recite:

A method of providing antibacterial activity to a ~~non-fibrous~~ surface of a filter body or a home appliance body using nano-sized metal particles, comprising:

coating a volatile ~~photocatalytically active semiconductor-free~~ solution dispersed with nano-sized metal particles onto the ~~non-fibrous~~ surface of the filter body or home appliance body;

drying the coated filter body or home appliance body; and

thermally treating the coated filter body or home appliance body wherein the nano-sized metal particles are deposited onto the filter body or home appliance body,

wherein the thermal treatment operation is performed at 50-150°C to prevent deformation of the filter body or home appliance body, and

wherein the metal particles are selected from the group consisting of silver (Ag), aluminum (Al), copper (Cu), iron (Fe), zinc (Zn), cadmium (Cd), palladium (Pd), rhodium (Rh) and chrome (Cr).

Hence, the terminologies “non-fibrous” and “ photocatalytically active semiconductor-free” have been deleted, no new matter is set forth in amended claim 1, and amended claim 1 is submitted to be in allowable form under 35 U.S.C. §112, first paragraph. Since claims 4-7, 9, and 19-23 depend from amended claim 1, claims 4-7, 9, and 19-23 are submitted to be in allowable form under 35 U.S.C. §112, first paragraph for at least the reasons that amended claim 1 is submitted to be in allowable form under 35 U.S.C. §112, first paragraph.

REJECTION UNDER 35 U.S.C. §103:

A. In the Office Action, at page 3, numbered paragraph 3, the rejection of claims 1, 4-7, 9, and 19-23 under 35 U.S.C. §103(a) as being unpatentable over Yamaguchi et al. (USPN 5,753,322; hereafter, Yamaguchi) was withdrawn based on the addition of what the Examiner characterized as “impermissible new matter.” However, the Examiner stated that, upon removal of the offending terms, this rejection will be reinstated. The rejection is traversed and reconsideration is requested.

Independent claim 1 has been amended as set forth above.

Hence, amended claim 1 recites providing antibacterial activity to a surface of a filter body or a home appliance body, in contrast to Yamaguchi’s provision of an aluminum building material comprising aluminum or an aluminum alloy, an anodic oxide substrate and a film containing a photocatalytically active semiconductor and deposited on the anodic oxide film, wherein the photocatalytically active semiconductor contains an antibacterial metal and the antibacterial metal may be selected from the group consisting of copper, silver and platinum.

As noted in the specification of the present invention (paragraphs [0007]-[0009]), the

prior art teaches that antibacterial metal particles may be placed in a resin and applied to a body, but this method is disadvantageous due to non-uniform dispersion of the metal particles or small amounts of the metal particles being in some locations. Hence, Yamaguchi teaches away from the claimed invention by reciting, as is shown in the prior art, that the base material for the coating film (that is, the film containing the antibacterial metal) is a coating material containing at least one resin, which may be selected from the group consisting of an acrylic resin, a polyester resin, a polyurethane resin, and a fluorocarbon resin, and which is disadvantageous.

In contrast, to avoid the problems encountered with putting metal particles in a resin and coating a body with same, the present claimed invention of amended claim 1 utilizes a method of coating nano-sized metal particles on a filter body or home appliance body by coating the body with a nano-sized metal particles dispersed in a volatile solution, and drying and thermally treating the coated body.

The claimed invention uses a volatile solution such as water or ethanol. Thus, no film remains after the thermal treating, and there is no discoloration when the present invention is utilized. In contrast, in paragraph [0010] of the specification of the present application, it states that in present commercial appliances, if metal particles are incorporated into the "resin," the formed body of the appliance may be discolored due to the metal particles incorporated into the "resin." Accordingly, the external appearance of the body becomes inferior, and the value thereof as a commercial product is decreased when the resin is used.

Thus, amended claim 1 is submitted to be patentable under 35 U.S.C. §103(a) over Yamaguchi et al. (USPN 5,753,322). Since claims 4-7 9, and 19-23 depend from amended claim 1, claims 4-7 9, and 19-23 are submitted to be patentable under 35 U.S.C. §103(a) over Yamaguchi et al. (USPN 5,753,322) for at least the reasons that amended claim 1 is patentable under 35 U.S.C. §103(a) over Yamaguchi et al. (USPN 5,753,322).

B. In the Office Action, at pages 3-4, numbered paragraph 4, the rejection of claims 1, 4-8, 10, 12-15, 17, 19-22 and 24 (we think the Examiner means claim 25 since claim 24 has been cancelled) under 35 U.S.C. §103(a) as being unpatentable over Nishida et al. (USPN 5,897,673; hereafter, Nishida) remained withdrawn due to either cancellation of claims (claims 8, 12-15, 17 and 24 were cancelled) or the addition of the term "non-fibrous" to the independent claim. However, the Examiner noted that the rejection will be reinstated for pending claims upon removal of the offending term.

Claim 10 has been cancelled without prejudice or disclaimer.

Independent claims 1 and 25 have been amended to show more clearly differences between the present claimed invention and Yamaguchi and Nishida.

As noted above, amended claim 1 of the present claimed invention utilizes a method of coating nano-sized metal particles on a filter body or home appliance body by coating the body with a nano-sized metal particles dispersed in a volatile solution, and drying and thermally treating the coated body. As noted above, the claimed invention uses a volatile solution such as water or ethanol so that no film remains after the thermal treating, and there is no discoloration when the present invention is utilized.

In contrast, Yamaguchi teaches encasing metal particles in a resin and coating the resin on an aluminum building material, which is teaching away from the present invention. As noted in paragraph [0010] of the specification of the present application, if metal particles are incorporated into the "resin," the formed body of the appliance may be discolored due to the metal particles incorporated into the "resin." Accordingly, the external appearance of the body becomes inferior, and the value thereof as a commercial product is decreased when the resin is used.

It is respectfully submitted that Nishida teaches (see claim 1) fine metallic particles-containing fibers, having ion-exchangeable or ion-coordinable polar groups, having crosslinked structure, and containing throughout fine particles of a substantially insoluble metal and a substantially insoluble metallic salt. Hence, Nishida teaches using fine metallic particles-containing fibers, which is a different structural configuration than coating nano-sized metal particles on a filter body or home appliance body, as is recited by amended claim 1.

Hence, Yamaguchi and/or Nishida, alone or in combination, do not teach or suggest the present claimed invention of amended claim 1. Hence amended claim 1 is submitted to be patentable under 35 U.S.C. §103(a) over Yamaguchi et al. (USPN 5,753,322) and/or Nishida et al. (USPN 5,897,673). Since claims 4-8, 12-15, 17, and 19-22 depend from amended claim 1, claims 4-8, 12-15, 17, and 19-22 are submitted to be patentable under 35 U.S.C. §103(a) over Yamaguchi et al. (USPN 5,753,322) and/or Nishida et al. (USPN 5,897,673) for at least the reasons that amended claim 1 is patentable under 35 U.S.C. §103(a) over Yamaguchi et al. (USPN 5,753,322) and/or Nishida et al. (USPN 5,897,673).

Amended claim 25 of the present invention recites:

A method of providing antibacterial activity to a ~~non-fibrous~~ surface of a copper/stainless filter body using nano-sized metal particles, comprising:

coating, onto the ~~non-fibrous~~ surface of the copper/stainless filter body, a volatile ~~photocatalytically active semiconductor free~~ solution dispersed with nano-sized metal particles selected from the group consisting of silver (Ag), aluminum (Al), copper (Cu), iron (Fe), zinc (Zn), cadmium (Cd), palladium (Pd), rhodium (Rh) and chrome (Cr); and

heating the filter at 50-150°C to obtain a deposit of nano-sized metal particles on the copper/stainless filter body.

A basis for the above amendment of claim 25 is Table I, page 8, of the specification.

Neither Yamaguchi nor Nishida teaches or suggests a copper/stainless filter body coated as recited in amended claim 25 of the present invention (see reasons recited in explanation of why Yamaguchi and Nishida, alone or in combination, are different from amended claim 1) and because neither Yamaguchi nor Nishida teaches or suggests using a copper/stainless filter body.

Hence, amended claim 25 of the present invention is submitted to be patentable under 35 U.S.C. §103(a) over Yamaguchi et al. (USPN 5,753,322) and/or Nishida et al. (USPN 5,897,673).

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot, and further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited. At a minimum, this Amendment should be entered at least for purposes of Appeal as it either clarifies and/or narrows the issues for consideration by the Board.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited and possibly concluded by the Examiner contacting the undersigned attorney for a telephone interview to discuss any such remaining issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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